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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/689,732 | 10/22/2003 | Yoshiki Maruya | Q78102 | 3997 |

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EXAMINER

POULOS, SANDRA K

ART UNIT PAPER NUMBER

1714

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/689,732 | Applicant(s) MARUYA ET AL. | |
| | Examiner Sandra K. Poulos | Art Unit 1714 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/22/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/22/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because of legal phraseology, in particular, the use of the word “comprises” and “comprising.” Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space

Art Unit: 1714

provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

2. Claim 3-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3 it is unclear what meant by the word "obtained" in "an obtained fluorine-containing polymer is a tetrafluoroethylene copolymer." More particularly, it is unclear if the fluorine-containing polymer is a tetrafluoroethylene copolymer that is obtained (i.e. produced) via the process given in claim 1 wherein the fluorine-containing olefin is/are those given in claim 3 and the surfactant(s) is/are given in formula (I). Furthermore, claim 3 is rendered unclear because claim 1 recites "a fluorine containing olefin solely or a fluorine containing olefin and other monomer" and claim 3, which is dependent on claim 1, recites "said fluorine containing olefin is tetrafluoroethylene, hexafluoropropylene and/or perfluoro(alkyl vinyl ether)." When taken to be "and" rather than "or" there are three olefins present whereas claim 1 allows only the olefin solely or the olefin and other monomer. The olefins in claim 3 are not specified as being the "other monomer" and further, claim 1 allows, at most, combinations of one olefin and

Art Unit: 1714

one monomer because "olefin" and "monomer" are both in the singular. Claim 4 is rejected for being dependent on a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Garrison (US 3,271,341).

Garrison '341 discloses the process of polymerization of a polymerizable monomeric monoethylenically unsaturated compound in an aqueous medium containing a water soluble polymerization initiator, and, as an ionizing dispersing agent, a water soluble compound having the general formula:

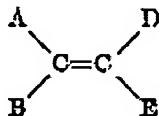


where X is a member of the class consisting of fluorine and the perfluoromethyl radical, m is a positive integer of 1 to 5 inclusive and n is a positive integer from 0 to 10, and A is a hydrophilic radical of the class consisting of hydrogen, ammonium radicals, and alkali metals (col 1, lines 24-36; col 6, claims 1 and 2).

The structure in Garrison '341 is the same as the currently claimed structure when n is 0 for both. In col 6, claim 9, n ranges from 0-3 and m is equal to 3, and

Art Unit: 1714

thus this embodiment shares endpoints with the currently claimed invention. The monomers that are polymerized to aqueous dispersions using the aforesaid dispersing agent are of the general formula:



where A, B, C, and D are given in column 5. Particular preferred are those of the general formula $\text{CF}_2=\text{CFR}$ where R is fluorine, perfluoroalkyl, perfluoroalkoxy, and copolymers of these halogenated monomers with each other (col 5, lines 53-58). Garrison '341 discloses the monomer tetrafluoroethylene (col 8, claim 21). Garrison '341 discloses that the principal object of the invention is to provide the dispersing agents which are suitable for use in the polymerization of ethylenically unsaturated monomers to form aqueous colloidal dispersions of polymer (i.e. a polymer latex) (col 1, lines 9-23). In column 6, claim 2, Garrison '341 specifies that the dispersing agent is 0.001-10% which overlaps the currently claimed range and shares an endpoint, and further specifies that the desired range is 0.05-0.3% by weight of the aqueous medium (col 3, lines 46-50). In the examples, tetrafluoropropylene and hexafluoropropylene are used in the polymerization and varying amounts of dispersing agent are used (col 3-5 and Table 1). The dispersions in the examples are colloidally stable (col 4) and in column 3, line 70-74 there is discussion of concentration of the resulting dispersion and a coagulum resulting.

It is inherent that the polymerization is an emulsion polymerization because of the use of the dispersing agents suitable for use in the polymerization

Art Unit: 1714

of ethylenically unsaturated monomers to form aqueous colloidal dispersions by the polymerization process given in the examples (col 1; col 3-5).

It is inherent that the "dispersing agent" in Garrison '341 is the same as the "surfactant" disclosed in the current claims. Further, "from the standpoint of patent law, a compound and all its properties are inseparable," *In re Papesch*, 315 F.2d 381, 391, 137 USPQ 43, 51 (CCPA 1963). Moreover, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), and further "when the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not," *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). In fact, "products of identical chemical composition can not have mutually exclusive properties," and a chemical composition and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Hence, Garrison '341 anticipates the cited present claims.

4. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu et al (US 5,296,165).

Shimizu '165 discloses $F(CF_2)_3O[CF(CF_3)CF_2O]_mCF(CF_3)COOX$ as a dispersant (col 4). The dispersant is used in an amount of 0.03 to 1% by weight

Art Unit: 1714

based on the weight of the aqueous medium (col 4, lines 20-23). Shimizu '165 discloses an aqueous dispersion comprising composite colloidal particles which comprise of a core made of a copolymer comprising 99-100% by weight of TFE and 0 to 1% by weight of an fluorine containing olefin which is copolymerizable with TFE (col 3, lines 13-25). Other polymers disclosed are chlorotrifluoroethylene, hexafluoroisobutene, and vinylidene fluoride (col 3, lines 13-25). There is a fluorine containing powder which is obtainable by coagulating and drying the aqueous dispersion (col 3, lines 26-29). The process of preparing PTFE is disclosed in columns 4-6. Shimizu '165 also discloses a concentration liquid prepared from a mixture of the aqueous dispersion and a stabilizer (col 7, lines 59-65).

It is inherent that the polymerization is an emulsion polymerization because of the use of the dispersing agents suitable for use in the polymerization of ethylenically unsaturated monomers to form aqueous colloidal dispersions by the polymerization process given in the examples (col 9-12).

It is inherent that the "dispersant" in Shimizu '165 is the same as the "surfactant" disclosed in the current claims (see explanation above).

Hence, Shimizu '165 anticipates the cited present claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 1714

Khan et al (US 4,380,618) and Morgan (US 4,621,116) disclose copolymerizing TFE by employing a perfluoroalkylethane acid as a dispersing agent.

Shimizu et al (US 4,564,652) discloses $F(CF_2)_cO[CF(Y)CF_2O]_dCF(Y)COOH$ as a dispersant in a process for preparing an aqueous PTFE dispersion comprising colloidal PTFE and at least one monomer copolymerizable with TFE.

Kondo et al (US 5,453,539) discloses $F(CF_2)_3O(CF_2)_2COOH$.

Sogabe et al (US 6,642,307) discloses $(CF_2)_3O[CF(CF_3)CF_2O]_nCF(CF_3)COONH_4$ as an emulsifying agent in producing fluoropolymer.

Visca et al (US 6,878,772) discloses $A-R_f-B$ wherein A and B equal to or different from each other are $-(O)_pCFX-COOM$ as a fluorinated surfactant.

Polastri et al (US 6,924,036) discloses fluorinated surfactants of the formula $T-O-R_f-CFX-COOM$ with compositions based on PTFE.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra K. Poulos whose telephone number is (571) 272-6428. The examiner can normally be reached on M-F 7:30-5:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119.

Art Unit: 1714

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP

Sandra K. Poulos
11/28/05

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